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ABSTRACT

An evaluation methodology is presented by which Prince George's Community College can assess alternative responses to anticipated fiscal constraints. The paper first points to four types of responses to financial problems and reviews two studies of community college responses to financial limitations. It then states the objectives for the development of this evaluation methodology and specifies criteria for evaluating policy options. Additionally, it reveals the limitations and constraints which must be considered when evaluating policy alternatives. Next, a mechanism is presented for assigning weight to options. The paper then enumerates the elements of two policy options: continuing with past practices of adding new programs as they are needed and implementing a policy of progressive retrenchment. After the information needed to assess these policies is identified, the steps involved in evaluating the alternatives are reviewed. The paper then notes that in addition to evaluating the options with respect to their fiscal impact, each component of the policy option must be evaluated with respect to its adoption and implementation. Finally, as an expository example, the progressive retrenchment option is evaluated using intermediate revenue estimates for fiscal years 1983 through 1986. Supporting data are appended. (AYC)

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COMMUNITY COLLEGE POLICIES FOR THE COMING FINANCIAL SQUEEZE

Working Paper #4

by

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COMMUNITY COLLEGE POLICIES
FOR THE COMING FINANCIAL SQUEEZE

Introduction

Higher education administrators will face difficult decisions in the 1980's. Paramount among the challenges institutions will have to address is how they will sustain the level and breadth of their services during financial crisis. Budgets will be pressured to expand by rising utility bills and salary demands. Tax limitations and other revenue constraints, such as the price elasticity of demand (how will tuition increases impact on enrollment?) will restrain budget growth. How might colleges respond to this financial squeeze? Four types of responses can be envisioned: reductions in activities, reductions in costs, increases in income, and temporary fund reallocation.

1. Most colleges provide a wide range of services, from academic coursework and vocational training to community services and recreational activities. An institution might choose to curtail or eliminate particular programs or activities.

2. As an alternative to cutting programs, a college might attempt to reduce the costs of providing the same mix and level of services. This is likely to be one of the initial responses to financial pressures. Reductions in non-instructional expenditures (for example, supplies and professional travel), increased class sizes, increased use of efficient instructional modes (such as televised lectures), and limited cost-of-living pay hikes are several cost-cutting methods available to colleges.

3. Efforts to increase revenue will be continued during financial crises. State and county officials will be lobbied to increase their contributions. However, it is usually the constraints on these sources of funding which have created the crunch, as public funds have not generally kept up with inflation (as measured by the Higher Education Price Index.)

Funds may be solicited from private donors, and efforts to obtain Federal grant money will frequently increase. Finally, students will be asked to pay more. Fee structures will change. Increased tuition, though resisted, may often be preferred to curtailment of services.

4. While most college expenditures are recurring and not deferrable, some, such as capital improvement projects, large scale maintenance, and development of new programs, may be postponed. In some cases, funds can be reallocated to meet immediate demands. Such transfers, and use of operating reserve funds, have limits.

What Have Other Colleges Done?

Two studies of community college responses to financial limitations were reviewed. A 1978 survey by W. G. McGuire ("Emerging Trends in State Support," New Directions for Community Colleges, 22, pp. 15-26) asked directors of public community colleges in 50 states and Puerto Rico what two-year colleges had done to respond to the revenue pinch. Thirty-nine states responded to the survey, of which 28 reported stable or declining funding. The following table summarizes the actions taken in 26 of the states with funding limitations:

Reaction to decreasing or stabilized financial support	Number of States (N=26)
Reduce non-instructional expenses	10
Increase part-time faculty	8
Increase student/teacher ratio	8
Eliminate programs	6
Restrict new program development	6
Increase local funding	6
Allocate resources to lobbying	4
Limit enrollments	3

A 1981 article by Gregory Jackson of Harvard ("Community Colleges in the Post-13 Era: Institutional Responses to Tax Limitation," Community/Junior College Research Quarterly, 5-2, pp. 141-166) reported how six California community colleges responded to the Jarvis-Gann

amendment's impact on funding. Five reactions were common to all six institutions: leave vacancies unfilled, cut supplies and equipment, cut or eliminate summer sessions, cut or eliminate community services, and increase class sizes. Five of the six colleges studied also depleted their reserves and reduced their part-time staff. Deferred maintenance and imposition of new fees were reactions of four of the colleges. Three of the colleges deferred planned construction; three also had reductions-in-force of full-time staff. Increases in tuition were not considered, as no community college in California charges tuition to state residents for credit instruction. The California experience suggests what actions might be implemented in other states when tuition increases become counter productive.

Statement of the Problem

Prince George's Community College is a comprehensive community college committed to providing broad access to a variety of credit and non-credit programming and support services, to (1) help County residents fulfill their potential and (2) support local economic development. I support this mission. As a Research Analyst for the College, I have a personal stake and professional role in the future of the institution. The purpose of this analysis is to provide decision-makers with a means of evaluating different approaches to solving the following problem:

> How can Prince George's Community College continue to provide comprehensive transfer, career, developmental, and community service programs for county citizens, between now and 1985, given the increasing financial squeeze caused by rising utility costs and salary demands at a time when enrollment is stable and state and local funding is constrained?

Criteria

What do we want our policy to achieve? In this section, the criteria for evaluating policy options will be specified. These are the things we

want to happen. The criteria are not of equal importance. A scoring system has been devised to reflect the relative weights assigned to each criterion.

The most important criterion, which must be satisfied, is the upholding of academic standards. The viability of any educational institution hinges on its reputation and acceptance. The College's mission suggests two other criteria, promotion of equal access and diversity of programs. To preserve staff quality and morale, cost-of-living salary increases are valued. The criteria and scoring are as follows:

1. Academic standards must be maintained. Any policy option that the Faculty Senate determines would necessitate a lessening of standards and would threaten the integrity of the College will be disqualified.

2. Promote equal access through an open-door admissions policy, appropriate counseling services, developmental programs, extension operations throughout the county, and a variety of delivery modes.

   a. Provide developmental instruction for every student needing or desiring it. (20 points if satisfied; if not available to all, points proportional to percentage served: 15 points if 75 percent accomodated, etc.)

   b. Provide classes at locations throughout the County. (2 points per extension center; maximum 15 points.)

   c. Offer a variety of instructional modes. (2 points for each delivery system utilized by at least 100 students annually: Cable TV, broadcast telecredit, Special Weekender, Saturday, Evening, newspaper, personalized system of instruction, Summer Session, cooperative education; maximum 15 points.)

3. Maintain a diversity of programs. (Now have 16 curricula in four transfer fields, 37 programs in six career fields, and a broad range of non-credit activities.)

   a. Score one-half (½) point for each credit program, and

   b. Score 4 points for maintaining or expanding current Community Services operations, proportionally less if operations decrease. (Maximum for criterion 3: 30 points)

4. Provide annual cost-of-living increases of at least five percent to all employees as long as inflation continues above that rate.

   a. Should the consumer price index fall below five percent, this criterion is inoperative. (Multiply total score of other two criteria by 1.25.)

   b. If inflation rate is five percent or above, score zero if no cost-of-living awarded, 20 points if COL equals or exceeds CPI, otherwise points proportional to COL/CPI ratio (e.g. if COL is 75 percent of CPI, score 15 points.)

Constraints

What don't we want to happen? Meeting our criteria is not enough. The negative aspects of policy options must also be evaluated. The ideal policy would achieve all the criteria without violating any constraints.

As with the criteria, there is one constraint that must be met. Annual revenue must equal expenditures. There are two other constraints or negative aspects to be minimized. Involuntary reductions in force of employees with permanent personnel status are highly undesirable. Similarly, tuition increases are to be constrained. Raising the cost to the student runs counter to the goal of accessibility. Large jumps in tuition could decrease enrollment. Assuming price elasticity of demand for educational services, both the income effect and the substitution effect could operate to reduce enrollment. As the price of education increases, this leaves less income for other purposes. Consumers may look for increased payoffs. They may not perceive increased returns -- can they expect gains in earnings to offset the cost of their educational investment? Others may partake in education as a consumption good -- enjoyable for its own sake. As its price rises, consumers may substitute other less expensive activities for enrichment or leisure. Those using education as a means to higher earnings may decide that on-the-job experience might be a better investment. The

point is that tuition increases are inherently undesirable for the increased hardship and lost opportunities faced by students, and because they may (in the extreme case) be economically counter-productive for the institution. This latter aspect will be taken into account by an enrollment projection model to be developed, which will include the effect of tuition at alternative institutions.

The three constraints to be used in this analysis are summarized as follows:

1. Do not allow expenditures to exceed revenues in any fiscal year. The College must meet its expenses each year. An option which fails to do this will be disqualified.

2. Minimize involuntary reductions in force. Deduct three points for each full-time and one point for each part-time staff member laid off. Deduct five points for each full-time faculty member laid off.

3. Minimize tuition increases. Deduct three points for each one dollar increase in per-credit tuition for county residents (compared to the preceding year).

Weighting Rule

Each policy option will be evaluated by its aggregate net score over the next five fiscal years:

Fiscal Year	Criteria Points (+)	Constraint Points (-)	Net Points
FY82			
FY83			
FY84			
FY85			
FY86			

Aggregate Net Points = _____

No policy option will be approved that has a net score below 50 for any fiscal year.

Policy Options

Two policy options will be evaluated initially. The first will be continuation of past practices. The second will be a policy of progressive retrenchment. Elements of the two policies are as follows:

Option I: Existing Marketing Policy

1. Develop programs and courses responsive to the recent enrollment trend lines and projected student needs of the 1980's.

2. Continue efforts to increase full-time enrollment.

3. Continue to use Extension Centers to provide a high degree of geographic access.

4. Continue to develop alternate instructional modes including PSI, CLEP, Weekend College, and Cable TV.

5. Increase emphasis on non-credit community-based programming.

Option II: Progressive Retrenchment

1. Continue efforts to improve recruitment and retention of students (including new curriculum development, honors program, study skills and other remedial courses).

2. Take advantage of normal attrition to re-allocate positions to areas of greatest need (academic departments with enrollment growth and a high ratio of part-time to full-time faculty). Do not fill full-time vacancies in counseling or disciplines with declining enrollment. Re-train (in-house) existing faculty to qualify for high-demand coursework and advisement. Continue hiring freeze for full-time permanent positions.

3. Replace current full-time faculty load norm of 15 credits per semester with 30 credits per contract year. Do not hire part-time faculty in disciplines with full-time underloads.

4. Increase the use of alternate government funds such as state grants for Vocational-Technical programs and services to the handicapped. Increase local matching funds for federal work-study programs in order to secure additional federal funds. Designate an office to assist College staff in obtaining federal grants.

5. Lobby state and county legislatures to increase funding.

Should significant revenue shortfalls occur, implement the following steps as necessary to meet expenses:

A. Increase tuition (to a maximum of $35 per credit hour)

B. Change Summer Session faculty pay rate from 1/40 of current full-time salary to the part-time rate across the board (saving $150,000).

C. Increase class size across the board, except in special programs where it's not possible, i.e., clinical experiences (saving $175,000).

D. Eliminate all faculty and staff conference travel allotments (saving $50,000).

E. Freeze all promotions and tenure (saving $20,000).

F. Increase faculty load from 15 credit hours to 18 credit hours (saving $225,000). Concommitently, increase all administrators' work load from 37½ hours per week to 40 hours per week; do the same for classified staff where appropriate.

G. Provide no salary increase across the board (saving $250,000).

H. Provide no cost-of-living increases across the board (saving $550,000).

Requirements

What do we need to know about the policy options in order to assess their impact on the criteria and constraints? Three types of requirements need to be evaluated. The first is the political question of adoption: Who has to cooperate/acquiesce? The second concerns requirements for implementation: What resources (financial, managerial, informational, technological) will be needed to put the policy in effect? The third requirement is that the policy "work": What impact would the policy have if it was adopted and implemented? The last requirement assumes causal models and is often addressed by economic analysis. The major requirements of the policy options to be evaluated are:

MAJOR REQUIREMENTS

Option I	Adoption	Implementation	Impact
Development of new programs & new delivery modes.	Needs assessment, development by faculty, approval of Dean, curriculum committee, Board of Trustees, SBCC.	Existing faculty must qualify; release time; new equipment (e.g., word processing curriculum, cable TV).	Attract new students, generate credit hours.

Option II	Adoption	Implementation	Impact
New programs	- - - - - - - - - -	-Same as in Option I-	- - - - - - - - - -
Re-allocation, normal attrition.	Agreement among Deans	Re-training costs.	Savings due to non-replacement.
Obtaining grant money.	Approval of President, Deans, Board of Trustees.	Capable staff, faculty.	Additional revenue (restricted fund).
Increase in state/ county aid.	State legislature, Governor; County Council, Executive.		Increased revenue.
Tuition increases	Board of Trustees.		Increased revenue vs. negative impact on enrollment.
Changes in compensation, class size.	Recommendation of President and Deans, Approval by Board.		Cost savings, possible morale/turnover problems.

Evaluation Methodology

Since the first criterion, maintaining standards, and the first constraint, that expenditures not exceed revenue, must be satisfied, they will be evaluated first. Options that fail either of these requirements will be disqualified.

Each policy option will be presented to the Faculty Senate for assessment of its impact on academic integrity. If they determine an option jeopardizes standards, it will be disqualified.

Evaluating the financial impact of each policy option constitutes the heart of the analysis. To establish a baseline, expenditure projections have been calculated for the next five fiscal years, assuming the current level and mix of activities and incorporating estimated inflation factors. (See Table 1.) The inflation factors for each budget component were estimated based on the informed judgements of administrators in the College's Business Affairs Office. The salary component assumed continued step

increases for current employees and a five percent cost-of-living increase each year. Other estimates involved higher degrees of uncertainty. The costs of utilities and telephone were projected to increase fifteen percent per year. Supplies and insurance estimates assumed a ten percent annual rate of increase. Due partly to time constraints, the informed opinions of local decision-makers were used in place of more rigorous methods, such as those based on component analysis of D. Kent Halstead's Higher Education Price Index.

Revenue projections depend largely on credit hour projections. Tuition is charged on a per-credit hour basis. State funding is currently $850 per full-time-equivalent student. County support is mandated at 28 percent of the total budget. These three sources -- students, state, and county -- contribute over 98 percent of the College's revenue. The balance comes from interest on investments and rent received for use of College-owned properties.

Because the enrollment projections are a crucial part of this analysis, they are discussed separately in a later section. Calculation of the estimated revenue based on the enrollment projections is straightforward. The fiscal year credit hour projection is apportioned 96 percent in-county, 2 percent other-Maryland, and 2 percent out-of-state. These three credit hour totals are multiplied by the appropriate tuition, and the total is increased by ten percent (to cover fees) to arrive at the student contribution. Fiscal year credit hours of in-state students (98 percent of the total) are divided by 30 to arrive at total F.T.E.'s for state funding. State and student contributions are totalled, and the county contribution (set at 28 percent of the final total) is added on. Other revenue sources, historically accounting for less than two percent of the budget, are ignored in the initial revenue projections.

The discrepancies between the projected expenditures and estimated revenues will be calculated. The ability of the policy options to eradicate the revenue shortfalls will be evaluated. This will involve an assessment of the likely revenue impact of each policy component listed in the requirements section. Many of these impacts have been estimated in the option specifications. (For example, elimination of travel allotments would save $50,000 per year.) Policy options that satisfy the first constraint, and meet the academic standards criterion, will be rated on criteria achievement and constraint violation according to the weighting system outlined earlier. The option with the highest aggregate net score will be most preferred, given that its annual scores are 50 or above each year.

Evaluation of Adoption and Implementation Requirements

So far the evaluation design has focused on the projected impact of various components of the policy options. Will they work? is of primary concern in assessing policy alternatives. In this analysis, impacts on *revenue* have been emphasized, since the financial squeeze is the problem being addressed. However, questions of adoption and implementation must also be considered. Is a given policy feasible politically? Are the necessary resources available to implement it if adopted? In this section, the methodology for evaluating the adoption and emplementation of each policy component will be outlined.

Development of New Programs and Delivery Modes

Published college plans (as reported in the *State Plan for Community Colleges in Maryland*) include the introduction of six new programs by Fall 1982. The programs, with estimated financial requirements, are as follows:

Program	Estimated Financial Needs Capital	Operating
Advertising Art Technology	$46,000	$32,000
Banking and Financial Management	0	16,000
Fashion Design	64,000	32,000
Hotel-Motel Management	0	28,000
Insurance Management	0	16,000
Public Administration	24,000	0

In addition, four other programs are under consideration. A program in Energy Development Technology has been deferred due to start-up capital costs estimated at $250,000. A Para-Legal option has been held up due to evidence of unfavorable employment demand. In contrast, a strong job outlook favors introduction of a Marketing/Merchandising Certificate. Finally, a Word Processing curriculum appears likely as three related courses are being introduced this fall.

In assessing the adoption/implementation of new programs (which are typically proposed by faculty or instructional administrators) the position of both college and state officials must be evaluated. Support of the appropriate Dean, the Curriculum Committee, the President, and the Board of Trustees is required. (Needs assessments produced by the Office of Institutional Research are often influential at this stage. For this reason, they will be requested for use as input in the policy analysis.) At the state level, final action on formal Program Proposals rests with the State Board for Higher Education. However, SBHE usually accepts the recommendation of the State Board for Community Colleges. The SBCC bases its evaluation primarily on (1) the availability of jobs for program graduates, (2) the transferability of skills to related fields, (3) student interest, (4) costs, including the need for new facilities or staff, (5) impact of the proposed program on similar programs at other colleges, and (6) articulation of the program with other secondary and post-secondary

institutions. Since final adoption of new programs hinges on these factors, the analysis being proposed would include an assessment of each.

While new directed-learning courses are continually being developed, the major new mode of instruction foreseeable in the next five years is cable television. The College currently offers about a half-dozen tele-credit courses over broadcast TV. Negotiations with the largest bidders for the county's cable franchise promise one channel exclusively for PGCC use. Existing faculty and media specialists have the interest and ability to deliver cable-credit courses, given release time for development. Cost estimates will vary greatly depending on the nature and scale of the programs developed. Nationally-distributed courses cost approximately $150,000. Less ambitious taping of lectures for local use would cost considerably less. (The College has a TV studio equipped to handle such programming.)

Re-allocation of Staff Positions

Agreement among the deans is the major requirement for adoption of this tactic. They must forgo "turf" considerations and accept a more college-wide perspective. Staff acceptance is probable, as the option is based on normal attrition and can defer or help minimize involuntary reductions-in-force. Confidential interviews will be conducted to evaluate this policy component. Release time for re-training would be the major implementation hurdle.

Obtaining Grant Money

The administration has not vigorously pursued "soft" money in the past. To assess whether this attitude has changed, confidential interviews with the President and Dean of Business Affairs will be proposed. Establishment of an office to develop expertise in proposal writing and the like would seem necessary for this tactic to have substantial success.

Increases in State and County Aid

Knowledgeable insiders at both state and county agencies will be interviewed to evaluate the likelihood of further funding increases.

Tuition Increases

Board of Trustees' approval is the major requirement for tuition changes. In the past, Board sentiment has resisted increases in the student contribution. However, it granted a 26 percent increase for FY82, and also approved revisions to the fee schedule. Officials aware of Board members' views will be asked to assess the probabilities of further tuition raises.

Changes in Compensation and Class Sizes

These elements of Option II constitute the "hard decisions." They will not be popular among faculty and staff. Strong leadership from the President and Deans seems essential. The Board of Trustees might be expected to accept these cost-cutting proposals as preferrable to further tuition increases or program curtailments. Projecting the reaction of faculty and staff beyond the initial displeasure will be an important consideration in the analysis. It is possible that eliminating salary step and cost-of-living raises and increasing faculty loads could generate "union fever" or job actions. Some reduction-in-force might be preferred to maintaining a disgruntled staff at present levels. Off-the-record discussions with faculty leaders (instructional coordinators, Faculty Senate members) as well as administrators will be employed to evaluate the seriousness of obstacles to implementation.

Enrollment Projections

In a 1981 article ("Weight Factor Selection in Double Exponential Smoothing Enrollment Forecasts," *Research in Higher Education*, Vol. 14, No. 1, pp. 49-56), Don Gardner categorizes enrollment forecasting methods into four types:

1. Pattern-based: Methods in this category attempt to identify an underlying pattern in historical data, describe it in mathematical terms, and then extrapolate it into the future. Specific examples range in complexity from simple averaging and ratio methods to cohort survival, Markov-chain, and the various curve-fitting formulas.

2. Correlation analysis: This type of approach develops projections on the basis of the numerical values of "leading indicator" variables which have been demonstrated -- e.g., through the use of multiple regression -- to have a strong relationship to enrollment level. Because an attempt is made to identify variables with a more or less direct impact on college enrollments, such as numbers of graduating high school seniors, methods of this type are often referred to as "causal methods."

3. Intention surveys: Intention surveys involve sampling specific groups to determine college attendance plans. Although this method can be relatively costly, it has been shown to be useful and reliable in some situations.

4. Professional judgement: Although this is probably the most commonly used approach, it is perhaps the most underrated. The lack of objectivity of this method may be more than offset by the benefit of experienced judgement and interpretation of subtle factors influencing enrollment not easily captured by mathematical models.

Of the four methods outlined above, professional judgement will be used initially in this analysis. An enrollment projection model based on correlation analysis will be developed by the Office of Institutional Research later in the year. Until it is available, the informed judgements of experienced administrators will be used to make enrollment estimates. Pattern-based methods were deemed unreliable in light of the known changes that will affect higher education in the 1980's. Intention surveys were judged too costly and of questionnable reliability.

The current College Master Plan, which is updated annually, includes projected fall enrollments through 1989. Using 1979 as a base, the projections were calculated assuming two percent annual decreases in full-time and three percent annual increases in part-time enrollments. These rates were chosen to reflect the expected decline in students direct from

high school (a major source of full-time enrollments), and the continued increase in older students returning to school for part-time study. (Prince George's Community College now enrolls two-thirds of the county residents attending college part-time for credit. As tuition increased at the major local competitive schools, PGCC was expected to attract an even larger proportion of the employed student market.)

Many factors influence the enrollment decision. It was decided to accept the College's projections as an *intermediate* estimate. To acknowledge the uncertainty inherent in such projections, and compensate for source bias, two additional estimates were developed. Each was supported by differing interpretations of the likely impacts of foreseeable changes.

The *low* estimate assumed three percent annual decreases in full-time students. College officials making this prediction emphasized the decline in high school graduates, the decreasing availability of financial aid, and likely further tuition increases. Part-time enrollment was predicted to increase one percent per year, as some would elect part-time study as an alternative to costly full-time attendance.

The *high* estimate projected stable enrollment of full-time students. The rationale was based on a different view of the impacts of financial aid and tuition changes. The proposed alteration of Federal student aid programs could benefit community colleges, in that students might enroll who would have gone elsewhere with guaranteed loans. Similarly, rising tuition costs at four-year institutions might lead students to choose the community college for the first two years of study. These increases were projected to offset the expected decline based on fewer high school graduations. Part-time enrollment was predicted to increase three percent per year. While further tuition increases are expected at PGCC, competitors (already more costly) are expected to have even larger increases. As the

tuition differential expands, more students are projected to opt for the community college for part-time study. Two-year colleges, with strong occupational programming, are expected to attract workers desiring technical and career training even if the economy fails to improve.

The discrepancies between projected expenditures under Option I and three levels of estimated revenue based on the preceding enrollment forecasts are presented in Table 2.

An Expository Example: Analysis of Option II

To demonstrate the proposed analysis, the Progressive Retrenchment Option will be evaluated using the intermediate revenue estimates. (Headcount, credit hour, and revenue projections are presented in the Appendix for all three estimate levels.) Assuming actual enrollments are as projected in the intermediate estimate, and state funding increases to $900 per F.T.E. for the FY82-86 period, the baseline expenditure and revenue projections yield revenue shortfalls for FY83-86. How might implementation of Option II eradicate them?

Fiscal Year 1983

Continuation of current operations would produce expenditures $1,165,000 in excess of revenue, according to intermediate level projections. Non-replacement of separated personnel in counseling and low-demand disciplines might be expected to save $25,000, based on the recent low turnover at the College. It is likely that contingency steps will have to be implemented. A fourteen percent increase in tuition (from $22-52-90 to $25-59-102.50 for in-county/other Maryland/out-of-state respectively) would produce an additional $951,000. Interest and rent income could cover the balance of $189,000.

Fiscal Year 1984

The projected deficit for FY84 under Option I (existing policy) would be $2,779,000. Assuming one additional vacancy left unfilled, savings due to non-replacement are estimated at $52,500. A twenty percent tuition increase (to $30-71-123) would yield a total student contribution of $9,544,821, or $2,546,843 more than the original (Option I) estimate. Rental and investment income could cover the remaining $180,000.

Fiscal Year 1985

The Option I deficit for FY85 under the intermediate enrollment assumptions would be $4,507,858. Raising tuition to $35-83-144, the maximum permitted under Option II, would reduce this by $4,161,000. Non-replacement could save $82,750, assuming another vacancy left unfilled. Interest and rental income, plus deferral of equipment purchases, might make up the balance of $264,000.

Fiscal Year 1986

Maintaining the tuition schedule implemented in FY85 (no further increase is allowed under Option II), student contributions would total $11,252,000. The remaining deficit would be $2,171,000. The non-replacement policy could save $116,000. Additional revenue sources might contribute $250,000. The resulting deficit to maintain the mix and level of operations would be $1,805,000. Implementing the complete contingency package of Option II would yield the following savings:

Action	Savings
Change Summer Session pay	$ 150,000
Increase class size	175,000
Eliminate travel allotments	50,000
Freeze promotions and tenure	20,000
Increase faculty load	225,000
Eliminate step increases	250,000
Eliminate cost-of-living raises	550,000
	$1,420,000

Thus, given $900 per F.T.E. in state aid and the intermediate enrollment estimate, the progressive retrenchment policy outlined in Option II would not be sufficient to maintain the existing level and/or mix of operations. It would be disqualified as a viable option due to its failure to satisfy the first constraint.

Concluding Remarks

The above example is an informal expository device to demonstrate the procedure. In the actual analysis, formal causal models would be specified for estimating the impact of new programs, non-replacement, additional revenue, and the like. Acknowledging this, the example suggests the following evaluative summary of Option II: By allowing tuition to double from the 1980 level, the current level and mix of activities could be maintained through FY85, assuming state funding increases to $900 per F.T.E. and vacancies due to normal attrition are left unfilled. Option II fails to balance the budget in FY86, however. Complete implementation of all aspects of the progressive retrenchment policy as outlined would not be enough. With a tuition ceiling of $35 per credit hour, it appears some curtailment of activities will be required by Fall 1985. The policy analysis procedure proposed here could be used to evaluate the different tuition/cost-cutting/program curtailment options.

The final product presented to policy-makers will include a ranking of policy options that meet the required specifications in order of preference, accompanied by the adoption/implementation assessment. Options that fail the standards criterion, the budget constraint, or the 50 annual point minimum will be listed with an explanation for their disqualification.

Table 1

PRINCE GEORGE'S COMMUNITY COLLEGE

Projected Expenditures to Maintain Current Operations,
FY82-86

	FY82	FY83	FY84	FY85	FY86
Salaries	$15,283,200	$16,309,800	$17,387,800	$18,519,700	$19,708,200
Equipment/Supplies/Services	2,129,900	2,342,900	2,577,200	2,834,900	3,118,400
Utilities	1,150,000	1,322,500	1,520,900	1,749,000	2,011,400
Insurance/Retirement	726,800	799,400	879,400	967,300	1,064,100
Postage/Telephone	392,800	470,400	553,500	643,200	740,300
FICA	371,200	396,200	422,300	451,400	480,900
TOTAL	$20,053,900	$21,641,200	$23,341,100	$25,165,500	$27,123,300

See text for explanation of estimating procedures.

Table 2

THE FINANCIAL SQUEEZE

Discrepancy Between Projected Expenditures and Three Levels of Estimated Revenue, FY82-86

Fiscal Year	Revenue Estimate		
	Low	Intermediate	High
1982	$ 533,947	$ *+350,044*	$ *+474,997*
1983	2,341,438	1,164,515	824,872
1984	4,250,658	2,779,182	2,228,397
1985	6,275,579	4,507,858	3,747,192
1986	8,424,036	6,354,503	5,390,153

Figures represent revenue shortfalls, except for FY82 intermediate and high estimates which are surpluses. See Appendix for revenue estimation procedures.

APPENDIX

A-1 Actual and Projected P.G. County High School Graduates

A-2 General Fund Operating Budget, FY81

A-3 Budgeted Expenditures, Percentage Distribution, FY81

A-4 Enrollment/Full-time Faculty Ratio, by Discipline

A-5 Part-time/Full-time Faculty Ratio, by Discipline

L-1 Actual and Projected Enrollments and Credit Hours of Full-time Students, Fall 1975-85, Low Estimate

L-2 Actual and Projected Enrollments and Credit Hours of Part-time Students, Fall 1975-85, Low Estimate

L-3 Actual and Projected Credit Hours and F.T.E.'s, FY76-86, Low Estimate

L-4 Projected Revenue, FY82-86, Low Estimate

I-1 Projected Enrollment and Credit Hours of Full and Part-time Students, Fall 1981-85, Intermediate Estimate

I-2 Projected Credit Hours and F.T.E.'s, FY82-86, Intermediate Estimate

I-3 Projected Revenue, FY82-86, Intermediate Estimate

H-1 Projected Enrollment and Credit Hours, Fall 1981-85, High Estimate

H-2 Projected Credit Hours and F.T.E.'s, FY82-86, High Estimate

H-3 Projected Revenue, FY82-86, High Estimate

Table A-1

PRINCE GEORGE'S COMMUNITY COLLEGE

Actual and Projected P.G. County High School Graduates
Enrolling at the Community College, 1976-85

Year	P.G. County High School Graduations	County Graduates Enrolling at Prince George's	Percent Enrolling at PGCC
1976	8,572	1,395	16.3%
1977	8,800	1,443	16.4%
1978	8,656	1,418	16.4%
1979	9,114	1,507	16.5%
1980	8,618	1,348	15.6%
1981	*8,218*	*1,315*	*16.0%*
1982	*8,142*	*1,303*	*16.0%*
1983	*7,246*	*1,159*	*16.0%*
1984	*6,991*	*1,119*	*16.0%*
1985	*6,899*	*1,104*	*16.0%*

Projections of public school graduates based on Pupil Personnel data.

Table A-2

PRINCE GEORGE'S COMMUNITY COLLEGE

General Fund Operating Budget, FY81

INSTRUCTION	$10,906,377
Compensation	10,299,516
Administrative salaries	637,272
Faculty salaries	8,026,518
Staff salaries	1,085,876
FICA	220,609
Group insurance	329,241
Supplies, travel, equipment rental	606,821
GENERAL ADMINISTRATION	$ 2,287,922
Compensation	1,735,384
Administrative salaries	280,785
Staff salaries	1,312,735
FICA	29,124
Retirement	23,131
Group, unemployment insurance	89,609
Equipment rental, supplies, services	552,538
PLANT OPERATION AND MAINTENANCE	$ 2,227,633
Compensation	1,221,421
Administrative salaries	37,116
Staff salaries	986,590
FICA	59,079
Retirement	78,199
Group insurance	60,437
Utilities	778,580
Electricity	460,000
Fuel, oil, gas	229,000
Water and sanitation	89,580
Equipment and supplies	227,632

General Fund Operating Budget, FY81 (Continued)

STUDENT AFFAIRS	$ 1,699,924
Compensation	1,529,287
Administrative salaries	349,949
Counselors' salaries	361,859
Staff salaries	729,050
FICA	29,085
Group insurance	59,344
Supplies, travel, services	170,637
INSTRUCTIONAL RESOURCES	$ 723,400
Compensation	527,847
Administrative salaries	37,116
Faculty salaries	175,495
Staff salaries	285,084
FICA	9,393
Group insurance	20,759
Library materials	195,553
GENERAL INSTITUTIONAL EXPENSES	$ 503,296
Telephone	217,700
Printing and publishing	110,151
Postage	102,452
Advertising, commencement, audit fees	72,993
TOTAL GENERAL FUND OPERATING BUDGET	$18,348,552

Table A-3

PRINCE GEORGE'S COMMUNITY COLLEGE

Budgeted Expenditures, FY81

	Dollars	Percent
COMPENSATION	$15,313,400	83.46%
Salaries	14,305,400	77.97%
Faculty salaries	8,202,000	44.70
Staff salaries	4,399,300	23.98
Administrative salaries	1,342,200	7.32
Counselors' salaries	361,900	1.97
Insurance/retirement	660,700	3.60%
FICA	347,300	1.89%
EQUIPMENT/SUPPLIES/SERVICES	1,936,300	10.55%
UTILITIES	778,600	4.24%
POSTAGE AND TELEPHONE	320,200	1.75%
TOTAL OPERATING BUDGET	$18,348,500	100.00%

Table A-4

PRINCE GEORGE'S COMMUNITY COLLEGE

Enrollment/Full-time Faculty Ratio, by Discipline,
Spring 1980

	Third Week Enrollment	Full-time Faculty	Enrollments per Full-time Instructor
CAREER EDUCATION	10,585	64	165
Business	5,615	16	351
Public Services	710	3	237
Computer Technology	1,815	9	202
Secretarial Science	874	5	175
Engineering Technology	631	8	79
Allied Health	446	9	50
Nursing	494	14	35
ARTS AND SCIENCES	24,098	164	147
Developmental Studies	2,001	6	334
Economics	1,294	5	259
Psychology	1,623	8	203
Mathematics	3,376	18	188
Music	540	3	180
Physical Science	1,531	9	170
Art	943	6	157
English Composition	2,637	17	155
Physical Education	2,259	15	151
Philosophy	443	3	148
History	1,305	9	145
Sociology	988	7	141
Speech	1,401	10	140
Career English	985	9	109
Political Science	674	7	96
Biology	1,047	11	95
Foreign Languages	602	7	86
Sophomore Literature	449	14	32
TOTAL	34,683	228	152

SOURCE: Systems and Programming Report INR 030 and Personnel Records.

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Table A-5

PRINCE GEORGE'S COMMUNITY COLLEGE

Part-time/Full-time Faculty Ratio, by Discipline,
Spring 1980

	Part-time Faculty	Full-time Faculty	Part/Full-time Faculty Ratio
CAREER EDUCATION	188	64	2.94
Business	100	16	6.25
Public Services	13	3	4.33
Secretarial Science	19	5	3.80
Computer Technology	30	9	3.33
Allied Health	9	9	1.00
Engineering Technology	7	8	0.88
Nursing	10	14	0.71
ARTS AND SCIENCES	180	164	1.10
Developmental Studies	26	6	4.33
Art	20	6	3.33
Economics	12	5	2.40
Physical Science	15	9	1.67
Music	5	3	1.67
Mathematics	27	18	1.50
Speech	14	10	1.40
Philosophy	4	3	1.33
Psychology	10	8	1.25
Physical Education	12	15	0.80
Career English	7	9	0.78
Foreign Languages	5	7	0.71
English Composition	10	17	0.59
Biology	5	11	0.45
History	4	9	0.44
Political Science	3	7	0.43
Sociology	1	7	0.14
Sophomore Literature	0	14	0.00
TOTAL	368	228	1.61

SOURCE: Personnel records

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Table L-1

LOW ESTIMATE

PRINCE GEORGE'S COMMUNITY COLLEGE

Actual and Projected Enrollments and Credit Hours
of Full-Time Students, Fall 1975-85

Fall	Full-time Students	Full-time Credit Hours	Credit Hours per FT Student
1975	4,015	54,773	13.64
1976	4,060	55,499	13.67
1977	4,446	60,247	13.55
1978	4,304	58,104	13.50
1979	4,322	58,074	13.44
1980	4,439	59,503	13.40
1981	*4,306*	*57,700*	*13.40*
1982	*4,177*	*55,972*	*13.40*
1983	*4,052*	*54,297*	*13.40*
1984	*3,930*	*52,662*	*13.40*
1985	*3,812*	*51,081*	*13.40*

Projections assume a three percent annual decrease in full-time students and a constant per student load.

Table L-2

LOW ESTIMATE

PRINCE GEORGE'S COMMUNITY COLLEGE

Actual and Projected Enrollments and Credit Hours
of Part-time Students, Fall 1975-85

Fall	Part-time Students	Part-time Credit Hours	Credit Hours per PT Student
1975	7,415	44,093	5.95
1976	7,855	45,552	5.80
1977	9,308	52,591	5.65
1978	9,524	52,272	5.49
1979	9,155	50,160	5.48
1980	9,308	50,255	5.40
1981	*9,401*	*50,765*	*5.40*
1982	*9,495*	*51,273*	*5.40*
1983	*9,590*	*51,786*	*5.40*
1984	*9,686*	*52,304*	*5.40*
1985	*9,783*	*52,828*	*5.40*

Projections assume a one percent annual increase in part-time students and a constant per student load.

Table L-3

LOW ESTIMATE

PRINCE GEORGE'S COMMUNITY COLLEGE

Actual and Projected Credit Hours and F.T.E.'s,
FY 6-86

Academic Year	Fall Credit Hours	Fiscal Year Credit Hours	F.T.E.
1975-76	98,866	236,192	7,873
1976-77	101,051	255,152	8,505
1977-78	112,838	263,023	8,767
1978-79	110,376	258,284	8,609
1979-80	108,234	259,117	8,637
1980-81	109,758	*262,765*	*8,759*
1981-82	*108,465*	*259,670*	*8,656*
1982-83	*107,245*	*256,749*	*8,558*
1983-84	*106,083*	*253,967*	*8,466*
1984-85	*104,966*	*251,293*	*8,376*
1985-86	*103,909*	*248,763*	*8,292*

Fall credit hour projections from previous tables. Fiscal year estimates based on FY80 ratio. F.T.E. = Fiscal Year Credit Hours divided by 30.

Table L-4

LOW ESTIMATE

PRINCE GEORGE'S COMMUNITY COLLEGE

Projected Revenue, FY82-86

Fiscal Year	State	County	Students	Total
FY82	$7,210,547	$5,465,587	$6,843,819	$19,519,953
FY83	7,128,950	5,403,933	6,766,879	19,299,762
FY84	7,051,600	5,345,324	6,693,518	19,090,442
FY85	6,977,650	5,289,178	6,623,093	18,889,921
FY86	6,907,100	5,235,794	6,556,370	18,699,264

Projected revenue based on credit hour estimates assuming three percent annual decreases in full-time students and one percent annual increases in part-time students. (See preceding tables.) Revenue estimates based on FY82 funding formulas.

Table I-1

INTERMEDIATE ESTIMATE

PRINCE GEORGE'S COMMUNITY COLLEGE

Projected Enrollment and Credit Hours of Full and Part Time Students,
Fall 1981-85

Fall	Full-Time Students		Part-Time Students	
	Headcount	Credit Hours	Headcount	Credit Hours
1981	4,350	58,290	9,587	51,770
1982	4,263	57,124	9,875	53,325
1983	4,178	55,985	10,171	54,923
1984	4,094	54,860	10,476	56,570
1985	4,012	53,761	10,790	58,266

Projections assume a two percent annual decrease in full-time students and a three percent annual increase in part-time students. Credit hour projections based on an average full-time load of 13.4 hours and an average part-time load of 5.4 hours.

Table I-2

INTERMEDIATE ESTIMATE

PRINCE GEORGE'S COMMUNITY COLLEGE

Projected Credit Hours and F.T.E.'s, FY82-86

Academic Year	Fall Credit Hours	Fiscal Year Credit Hours	F.T.E.
1981-82	110,060	263,489	8,783
1982-83	110,449	264,420	8,814
1983-84	110,908	265,519	8,851
1984-85	111,430	266,768	8,892
1985-86	112,027	268,198	8,940

Fall credit hour projections from preceding table. Fiscal year estimates based on FY80 ratio. F.T.E. = Fiscal Year Credit Hours divided by 30.

Table I-3

INTERMEDIATE ESTIMATE

PRINCE GEORGE'S COMMUNITY COLLEGE

Projected Revenue, FY82-86

Fiscal Year	State	County	Students	Total
FY82	$7,746,300	$5,713,104	$6,944,540	$20,403,944
FY83	7,774,203	5,733,472	6,969,010	20,476,685
FY84	7,806,603	5,757,337	6,997,978	20,561,918
FY85	7,842,603	5,784,140	7,030,899	20,657,642
FY86	7,884,903	5,815,263	7,068,631	20,768,797

Projected revenue based on credit hour estimates assuming two percent annual decreases in full-time students and three percent annual increases in part-time students. (See preceding tables.) Revenue estimates assume an increase in state aid to $900 per F.T.E.

Table H-1

HIGH ESTIMATE

PRINCE GEORGE'S COMMUNITY COLLEGE

Projected Enrollment and Credit Hours, Fall 1981-85

Fall	Full-Time Students		Part-Time Students	
	Headcount	Credit Hours	Headcount	Credit Hours
1981	4,400	58,960	9,587	51,770
1982	4,400	58,960	9,875	53,325
1983	4,400	58,960	10,171	54,923
1984	4,400	58,960	10,476	56,570
1985	4,400	58,960	10,790	58,266

Projections assume stable enrollment of full-time students and a three percent annual increase in part-time students. Credit hour projections based on an average full-time load of 13.4 hours and an average part-time load of 5.4 hours.

Table H-2

HIGH ESTIMATE

PRINCE GEORGE'S COMMUNITY COLLEGE

Projected Credit Hours and F.T.E.'s, FY82-86

Academic Year	Fall Credit Hours	Fiscal Year Credit Hours	F.T.E.
1981-82	110,730	265,093	8,836
1982-83	112,285	268,815	8,960
1983-84	113,883	272,641	9,088
1984-85	115,530	276,584	9,219
1985-86	117,226	280,644	9,355

Fall credit hour projections from preceding table. Fiscal year estimates based on FY80 ratio. F.T.E. = Fiscal Year Credit Hours divided by 30.

Table H-3

HIGH ESTIMATE

PRINCE GEORGE'S COMMUNITY COLLEGE

Projected Revenue, FY82-86

Fiscal Year	State	County	Students	Total
FY82	$7,794,000	$5,748,091	$6,986,806	$20,528,897
FY83	7,902,900	5,828,572	7,084,856	20,816,328
FY84	8,015,400	5,911,557	7,185,746	21,112,703
FY85	8,131,500	5,997,126	7,289,682	21,418,308
FY86	8,251,200	6,085,281	7,396,666	21,733,147

Projected revenue based on credit hour estimates assuming stable enrollment of full-time students and three percent annual increases in part-time students. (See preceding tables.) Revenue estimates assume an increase in state aid to $900 per F.T.E.

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